

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A wireless communication system comprising a base station and an associated station for conducting wireless packet communications,

wherein the base station and the associated station have each a plurality of antennas,

wherein the base station comprises:

a base station antenna selection unit which selects a packet transmit antenna from among the plurality of antennas;

an antenna selection control unit which specifies the antenna to be selected by the base station antenna selection unit based on quality information of each transmission path established between the plurality of antennas and the antenna selected from among the plurality of antennas of the associated station; and

a transmit control unit which transmits a packet to be transmitted to the associated station from the antenna selected by a base station antenna selection unit, and wherein the associated station comprises:

an associated station antenna selection unit which selects one antenna from among the plurality of antennas;

a receive unit which receives the packet through the antenna selected by the associated station antenna selection unit; and

an antenna switch control unit which controls so as to switch the antenna selected by the associated station antenna selection unit to a different antenna each time the packet is received in response to receiving the packet by the reception unit.

2. (Previously Presented) The wireless communication system according to claim 1,

wherein the base station comprises a transmit power control unit which controls transmit power of the packet based on the quality information.

3. (Previously Presented) The wireless communication system according to claim 1,

wherein the associated station comprises:

a selection probability storage unit which stores the selection probability indicating what probability each of the plurality of antennas is to be selected at;

a receive quality information storage unit which stores receive quality information associating the receive quality of the packet received at the receive unit and the antenna receiving the packet with each other; and

a selection probability update unit which updates the selection probability based on the receive quality information, and

wherein the antenna switch control unit determines the different antenna based on the selection probability.

4. (Previously Presented) The wireless communication system according to claim 1,

wherein the base station comprises a space-time coding unit which performs space-time coding of the packet to generate a plurality of coded packets,

wherein the base station antenna selection unit selects as many antennas as the number responsive to the number of the coded packets,

wherein the transmit control unit transmits the plurality of coded packets from the selected antennas to the associated station at the same time, and

wherein the associated station comprises a combining unit which combines the plurality of coded packets received in the reception unit.

5. (Previously Presented) The wireless communication system according to claim 1,

wherein the base station comprises an RSSI estimation unit which estimates RSSIs of the packets received through the plurality of antennas from the antenna selected by the associated station antenna selection unit, and

wherein the quality information is the estimated RSSI.

6. (Previously Presented) The wireless communication system according to claim 1,

wherein the packet contains a response request packet for making a request to send a receive response of the packet and a data packet,

wherein at the packet communication start time with the associated station, the transmit control unit transmits the response request packet to the associated station from the antenna selected by the base station antenna selection unit,

wherein the associated station receives the response request packet by the receive unit and transmits a response packet of a response to the response request packet to the base station from a different antenna to which the antenna is switched by the antenna switch control unit,

wherein the base station comprises an RSSI estimation unit which estimates RSSIs of the response packets received at the plurality of antennas,

wherein the quality information is the RSSI, and

wherein the transmit control unit transmits the data packet to the associated station from the antenna selected by the base station antenna selection unit according to the specification based on the quality information.

7. (Previously Presented) The wireless communication system according to claim 6,

wherein the data packet contains the response request packet.

8. (Previously Presented) The wireless communication system according to claim 1,

wherein the plurality of antennas of the base station and the associated stations have different characteristics.

9. (Previously Presented) A wireless station for conducting wireless packet communications with an associated station, the wireless station comprising:

a plurality of antennas;

an antenna selection unit which selects a packet transmit antenna from among the plurality of antennas;

an antenna selection control unit which specifies the antenna to be selected by the antenna selection unit based on quality information of each transmission path established between the plurality of antennas and the antenna selected from among a plurality of antennas of the associated station; and

a transmit control unit which transmits a packet to be transmitted to the associated station from the antenna selected by the antenna selection unit,

wherein the antenna selected from among the plurality of antennas of the associated station is switched to a different antenna each time the packet is received in the associated station.

10. (Previously Presented) The wireless station according to claim 9, comprising:

a transmit power control unit which controls transmit power of the packet based on the quality information.

11. (Currently amended) The wireless station according to claim 9, comprising:

a space-time coding unit which performs space-time coding of the packet to generate a plurality of coded packets,

wherein the antenna selection unit selects as many antennas as the number responsive to the number of the coded packets, and

wherein the transmit control unit transmits the plurality of coded packets from the selected antennas to the associated station at the same time.

12. (Previously Presented) The wireless station according to claim 9, comprising:

an RSSI estimation unit which estimates RSSIs of the packets received through the plurality of antennas of the wireless station from one antenna selected from among the plurality of antennas of the associated station,

wherein the quality information is the estimated RSSI.

13. (Previously Presented) A wireless station for conducting wireless packet communications with an associated station, the wireless station comprising:

a plurality of antennas;

an antenna selection unit which selects one antenna from among the plurality of antennas;

a receive unit which receives a packet transmitted from a packet transmit antenna selected from among a plurality of antennas of the associated station through the antenna selected by the antenna selection unit; and

an antenna switch control unit which controls so as to switch the antenna selected by the antenna selection unit to a

different antenna each time the packet is received in response to receiving the packet by the receive unit.

14. (Previously Presented) The wireless station according to claim 13, comprising:

a selection probability storage unit which stores the selection probability indicating what probability each of the plurality of antennas is to be selected at;

a receive quality information storage unit which stores receive quality information associating the receive quality of the packet received at the receive unit and the antenna receiving the packet with each other; and

a selection probability update unit which updates the selection probability based on the receive quality information,

wherein the antenna switch control unit determines the different antenna based on the selection probability.

15. (Previously Presented) The wireless station according to claim 13,

wherein the packet transmitted from the associated station is a plurality of coded packets generated by performing space-time coding of the packet, and

wherein the wireless station comprises a combining unit which combines the plurality of coded packets received in the reception unit.

16. (Previously Presented) The wireless station according to claim 9,

wherein the plurality of antennas have different characteristics.

17. (Previously Presented) The wireless station according to claim 13,

wherein the plurality of antennas have different characteristics.